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PAPERS READ  
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I.—*Report on his Journey to Ilchi, the Capital of Khotan, in Chinese Tartary.* By Mr. Civil-Assistant W. H. JOHNSON, F.R.G.S., Great Trigonometrical Survey of India.

*Read, November 12th, 1866.*

A DETACHED party of the Kashmir Series of the Great Trigonometrical Survey, under my charge, left Dehra Doon on the 27th May, proceeded *viâ* Simla and Rámpur, and, on the 17th July, arrived at Leh, where I was obliged to halt the camp for a week, to enable me to make the arrangements necessary for my further progress.

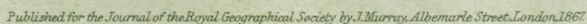
On leaving Leh I took the well-known route *viâ* Tikse and Táñksí to the Pangong Lake, and then crossed over the Másimik Pass, to the encamping ground of Pamchálan, in the valley of Chángchénmo. I then marched eastwards up the Chángchénmo Valley, halting at the celebrated hot springs known as Kíam, and again at Lúmkáng; thence I marched northwards and crossed a pass called by my shikari the Lúmkáng Pass, over a range of hills, which, running from east to west, rises to a height of about 3000 feet above the Chángchénmo Valley, and forms its northern boundary. I then marched in a northerly direction on high extensive table-lands, which might be called plains in comparison with the rugged ranges of the Himalayas, for they have a greater extent of level than of hilly ground, and the hills are low and have such easy slopes, that a horse may be galloped over them everywhere. The first plain is about 17,300 feet above the sea-level; it bears traces of having been the bed of a large lake, and at present contains two lakes, which, when I saw them, covered areas of about 16 and 60 square miles respectively, and are probably much larger in April and May, on the melting of the snows. A second plain slopes for a



*English Miles*

A horizontal scale bar with tick marks at 10, 20, 30, 40, and 50 miles. The numbers are placed below the tick marks. The bar starts with a vertical line on the left and ends with a vertical line on the right. There are four small vertical tick marks between each major number.

*Boundary of Kashmir*









distance of 30 miles in a north-easterly direction from 16,700 feet down to 15,300, when it rises again towards the watershed of the Kíun Lun. I traversed these two plains, and skirted a third lying to the north-west of the second. From the hills I ascended I noticed other plains of considerable extent to the east and south-east, which are believed to merge into the Chángtháng Plains of Rudok. On the other hand, to the west, there were no plains, but a series of deep valleys, which are the sources of one of the principal affluents of the Kárakásh River. I struck this river at a point 6 miles west of the G. T. Station on the Kíun Lun, which is marked E 57 (lat.  $35^{\circ} 53' 36''$ , long.  $79^{\circ} 28' 32''$ , height 21,767). At this point the height of the river is 15,500 feet. Its sources are about 25 miles distant to the S.E., in a spur from the Kíun Lun, which separates the valley of the Kárakásh from the second of the plains already noticed.

I may here state that I gathered from native information that the Kíun Lun range stretches in an easterly direction for a distance of about 100 miles from the sources of the Kárakásh River, and then terminates on an extensive plain, communicating with the Chángtháng Plain. I was informed that by skirting the Kíun Lun range, wheeled conveyances might be easily taken from Ilchí to the Chángchénmó Valley near Leh; that water, grass, and wood, are obtainable at every halting-place, and that the only difficulty is the liability to meet with opposition from the shepherds of Rudok, in the portion of the route which passes across the Chángtháng Plain.

I ascended three peaks of the Kíun Lun range, which had been previously fixed by the Trigonometrical operations of the Survey, and which, having no names, are known by us as E 57, E 58, and E 61. The contrast between the view to the north and that to the south was very striking; on the one side there was little but plain, on the other mountains and deep valleys. I might almost have fancied myself on one of the southern ranges of the Himalayas, with the plains of India to the south, and great mountain ranges to the north, excepting, that in consequence of the great altitude of the Kíun Lun peaks, the mountains to the north were generally lower than those on which I was standing.

From these peaks, however, I could not get a view of any of the important towns of Khotan, which I was so anxious to see, and I should have been obliged to have been satisfied with the extent of exploration which I had already accomplished, had not an opening presented itself for me to proceed to Khotan, under the protection of the khán of that country.

While I was in Leh, a native of Central Asia presented me a

letter from the Kháñ Bádshá of Khotan, inviting me to enter his territory, as he wished much to see me ; he also stated that the kháñ, having heard the previous season of my being in the neighbourhood of his boundary, had sent men at that time to induce me to see him, but that I had left Sukit, and returned to Leh, before his messengers arrived at the former place.

The receipt of this letter, in which the Kháñ of Khotan agreed to render me every assistance, and to permit me to return to Leh, after a short stay in his capital Ilchí, together with the personal statements of several merchants and traders of Leh and Yárkand, emboldened me to undertake the risk of visiting the Khotan country, thinking by this enterprise to be able to furnish information of value to our Government, as regards those provinces of Central Asia, which are at present almost unknown to Europeans, and also of the movements of the Russian forces in those parts of the world.

On arriving at the source of the Kárakásh River, I despatched the Khotan messenger, whom I had brought away with me from Leh, with a letter to Habíbullá, Kháñ of Khotan, proposing that I would visit him, provided he sent either of his two sons, or his wazeer, to receive me at the first village on the northern side of the Kíun Lun range of mountains.

While waiting at the Kárakásh for a reply to my letter, I employed myself in visiting several peaks, in order to fix sufficient points on the plane table for extending the work across the Kíun Lun range, and in taking observations for determining the rate of my watch.

The bearer of my letter returned on the twentieth day after his departure, accompanied by a beg, or governor of a small province, and an interpreter, with a letter from the kháñ, pressing me earnestly to visit him, with promises to take every care of me while I continued in his territory, and informing me that he had despatched his wazeer, Saifullá Khojá, to meet me at Brinjgá, the first encampment beyond the Ladák boundary, for the purpose of escorting me thence to Ilchí.

On the 6th September I started from my encampment at the Kárakásh towards Brinjgá, which I reached in four days, and found the wazeer awaiting my arrival. It took me 16 days in all to march from the Kárakásh to Ilchí. The road was very difficult, and the pass by which I crossed the Kíun Lun was said to have been only very recently discovered by Jumá Kháñ, the Khotan ambassador to the British Government, who was compelled to find his way over this part of the range, because the regular road from Ilchí to Leh, *viâ* Sanjú and the Kárakoram Pass, was in the hands of the Yárkandees, who were then at war

with the people of Khotan. I have described this route in full in Route No. I. accompanying this report.

On my arrival at Brinjā I was received by the wazeer Saifullā Khojá, and further on at the town of Urangkásh, which is three miles from Ilchí, by the kháñ's two sons, escorted by cavalry and infantry, and was accompanied by them to the capital, where I was very comfortably housed in the old Chinese fort. I had interviews with the Kháñ of Khotan and his two sons almost every day of my stay in the place.

The Kháñ Bádshá of Khotan is about eighty years of age, of good stature and appearance, and about 6 feet in height; rather stout, but well-built, and of a very fair complexion. He is seen to great advantage when dressed in his robes of state, which consist of a choga of silk, worked over with gold thread, and a large white puggrie (turban) tied after the Mogul style. He is reported to be very ill-tempered, and very strict in his government. I must, however, admit that he showed me much kindness while in his country, and kept all his promises, with the exception of not allowing me to leave the place, after a stay of four days, as had been agreed upon; and in wishing to keep me with him altogether,—which he would have done, had I not pointed out to him the uselessness of his doing so. He wished to detain me as a hostage, until such time as the British Government sent him assistance, in the shape of troops and arms, against the Khokánees, or Andajánees, and the Russian forces, which latter are daily approaching towards Yárkand and Khotan. The Kháñ of Khotan mentioned to me that he and his second son travelled through India, *viâ* Peshawar, Mooltan, and Bombay, to Mecca, in 1861, and returned to Khotan in the early part of 1863, passing through Persia, Turkestan, and Khokán, and penetrating for some distance into Russian territory. On his return he was made the chief kází of Ilchí, and within a month he succeeded in raising a rebellion against the Chinese, which resulted in their massacre, and his election by the inhabitants of the country to be their Kháñ Bádshá, or ruler. The province of Khotan was the first in which the Chinese were destroyed, and the example was followed in Yárkand, Aksú, and other cities. As the result of his own observations, and the experience he has derived from his travels, the kháñ also informed me that he found the inhabitants of India enjoying greater advantages as regards justice, liberty, and freedom from oppression, than any other country. The Russian principles of Government he said were oppressive, particularly the conscription, which forces men to serve in distant parts of the empire, far away from, and with but little

chance of revisiting, their homes. The Khokánees also dread the country of Sibar (Siberia), which they are aware is the penal settlement of the Russian Government.

Khotan, which was formerly a province of China, is now independent,—the Mahomedan population of Yárkand, Khotan, Káshgár, and other provinces of Central Asia, having, in 1863, massacred all the Chinese in those parts, save a few who adopted the Mahomedan religion.

The whole country of Khotan north of the Kíun Lun range, including seven parganáas of Yárkand which had submitted to the khán during my stay in Ilchí, is an immense plain, sloping gently downwards to Aksú, which place is fifteen long marches north of Ilchí. This entire plain is watered by numerous small streams and some large rivers, which are the principal affluents of the Tárím or Argol River, which, in its turn, disembogues into the great lake called Lob Núr. The whole country is irrigated by canals from these rivers.

At a distance of six miles to the north-east of Ilchí is the great desert of Taklá Makán (Gobi) which, with its shifting sands that move along in vast billows overpowering everything, is said to have buried 360 cities in the space of 24 hours. The edge of this desert has the appearance of a low range of broken hills, and consists of hillocks of moving sand, varying in height from 200 to 400 feet. Tea, of which I have brought away a sample, was dug out of one of these entombed cities while I was at Ilchí, and was believed by the natives to be of great age. Gold coins,\* weighing 4 lbs., and other articles, are also reported to have been found in some of them, but the positions of these cities are only known to a few persons, who keep it a secret in order to enrich themselves. The only one that is well known is that in which very large quantities of brick tea are found, and which commands a ready sale in the markets, now that all trade with China is stopped. The site of this buried city is a mile to the north of Urangkásh.

The soil of the country is mostly sandy, and quite free from stones and rocks; it is very productive, from the circumstance of the fine dust being carried by currents of air from the desert

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\* I endeavoured to obtain ancient coins and records, but was informed that none were procurable at Ilchí and Yárkand, but only in Káshgár, the latter being an ancient city, and one of those which escaped being buried by the desert. Ilchí and Yárkand are reported to have been founded after the above-mentioned destruction, and are therefore considered new cities. This statement appears to have some foundation, for I never saw or heard of a single ruin, though I made every inquiry, while Káshgár is said to contain extensive ruins.



and deposited in the plains. During my stay at Ilchí I noticed this phenomenon on several occasions; although there was no wind blowing, the whole atmosphere was so thickly filled with dust, that I was obliged to use a candle at mid-day to be able to read large print. The dust which fell was of an extremely fine quality, and of a very light colour, resembling pulverized clay. The inhabitants declare that this deposit is as good as manure for the soil, and that no vegetation would thrive without it.

The chief grains of the country are—Indian corn, wheat, barley of two kinds, bajra, jowar, buck-wheat, and rice; all of which are superior to the Indian grains, and are of a very fine quality, from the circumstance of the climate being mild and more equable in temperature, with moderate rain in slight showers occasionally. The country is certainly superior to India, and in every respect equal to Kashmir, over which it has the advantage of being less humid, and consequently better suited to the growth of fruits. Olives, pears, apples, peaches, apricots, mulberries, grapes, currants, and melons—all exceedingly large in size and of a delicious flavour—are produced in great variety and abundance. Besides these, the plant from which the charas is extracted is met with in almost every field; it differs slightly from the charas plant as found in India, having broader leaves, and growing to a larger size. Cotton, of valuable quality, and raw silk, are also produced in very large quantities.

The principal forest trees are the poplar, willow, and tamarisk. About the towns and villages these trees have been mostly planted, but between Khotan and Aksú, for a distance of twelve marches, there is such a dense forest of them that travellers are said to have lost themselves in it. Some of the poplars are reported to be of an immense size, and are used for the purposes of house building. The whole country is very rich in soil, judging from the splendid grass which is found wherever water has flowed over, even for a single day. I have a great variety of grasses, &c., as samples. The greater portion of the country is waste, for want of inhabitants, and the present produce is more than sufficient for the wants of the comparatively small population.

The whole country, especially the Kíun Lun range of mountains, is wealthy in minerals, viz.: gold, silver, iron, lead, copper, antimony, salt, saltpetre, sulphur, soda, and coal; of this last I have samples. It is found near the village of Dúá in Khotan, and to the west of Yárkand, on the road to Káshgár. Gold and precious stones are chiefly found in the beds of the

streams, which issue from the Kíun Lun range, and in very large quantities about Kárangoták, Kíríá, and Chírá. It is said that 3,000 men are daily employed in the gold-fields. The ordinary value of gold in Khotan is Rs. 9 to 10 per tolá, while in Kashmir the same quantity sells for 17 to 18 Rs.: this circumstance alone will show how abundant gold is, and how large a quantity there must be at the present time in the country.

The principal towns in the country of Khotan are Ilchí, Kárákash, Úrangkash, Chírá, Kíríá, and Ták. Those of Yárkand are Yárkand, Poshgaoñ, and Kargalik; and those of Káshgár are Káshgár and Yangíshahar.

The villages of Khotan are mostly small (with the exception of Kárangoták and Cháchan, which were Chinese penal settlements), and scattered, while those of Yárkand, such as Sanjú and Kugíár, are very large.

Of the cities above mentioned, Yárkand is the largest, and is a great place of trade. The Bokhárá and Khokán caravans with sugar-candy, loaf-sugar, cloth, wrought iron, brass, iron vessels, and other articles, which are brought from Petropavlovsk, Semipolatsinsk, Troitska, and Bokhárá, after passing through Khokán, visit Yárkand twice a year, with as many as a thousand camels. Traders also from Vernoe, Ak Masid (Fort Perovski), and Ilí, with horses, China tea, and silks, frequent this city in great numbers.

Ilchí is next in importance, and is a great manufacturing city; the chief articles of manufacture are silks, felts, carpets, both silk and woollen, and coarse cotton cloths; some of these are used up in the country, and the rest exported to Yárkand and Leh. The raw silk produced is of very coarse texture, owing to bad reeling. Paper is also made out of the mulberry fibre, and exported westwards.

Bazars or fairs are held in the city once or twice a week, in which most of the trade transactions in goods and animals take place. The Ilchí bazar, which I visited, presented a very lively scene, both men and women being very anxious to buy and sell. I noticed that during these fairs very large quantities of meat, including camel and horse flesh, were consumed by the people of Central Asia.

The wild animals seen in the country are the goat, wolf, jackal, fox, and hare, all of which are of the Tibetan species. Bears, tigers, and leopards, are said to exist in the forest between Khotan and Aksú. Among the wild birds are geese, ducks, chikoor (large and small), pigeons, quail, kites, crows, and hawks, of which last species the karál (bear coot) is very

large, and of a black colour; this bird is kept by the natives for the purpose of hunting wolves, jackals, &c., which it seizes with great energy.

The domestic animals are camels (Bactrian), horses, mules, asses, cattle (Tibetan and Indian), goats, and Dumbá sheep. The goats are to be met with in large flocks. Of the above, the camels and asses are used for lading, and the horses for riding and drawing wheeled conveyances which resemble the Indian country carts, but are lighter; they are generally drawn by four horses, one being in the shafts, while the other three go abreast as leaders. Most of the horses in the country are not bred there, but are imported from Badakshán, Ilí, and the country of the Kilmák Tartars,—the large horses being from the former place, and the ghoonts from the latter, where they are reported to be very numerous, one shekh alone being said to have 10,000 mares.

The domestic birds are geese, ducks, and fowls, the latter being very abundant.

The chief sports of the country are hawking and a game called Boj-Bájí (sheep wager), which consists in horsemen racing after one of their number, and trying to get possession of a sheep which he is carrying: this game is carried on until both horses and men are completely exhausted. The men of this part of Central Asia are mostly excellent riders; almost every man has one or more horses, and they seem to have a great dislike to walking.

The population of Ilchí is about 40,000, and that of the whole country of Khotan about 250,000, the females preponderating over the males to the extent of twenty per cent. This inequality of the sexes is attributable to a number of males having left the country, some having been banished, and others killed during the late disturbances with the Chinese, Khokánees, and Kuchárees. The men are mostly fine-looking, with fair complexions, and very well built; the women are rather short, but pretty; both sexes have a slight Tartar cast of features, and it is remarkable that both men and women are well and cleanly appareled. The inhabitants are all Mahomedans. They speak the Turkí language, and, judging from the numerous prayers they repeat, are very strict in the observance of their religious requirements.

The taxes of the country are moderate. The kháñ takes a tenth of all the produce, also of the gold and animals of the country; the same tax is levied on exports and imports, but the kháñ intends increasing the rates of taxation on goods imported from Leh, so as to equal the heavy duties imposed by the



Maharajah of Kashmir on the exports from Khotan. The khán informed me that he was dissatisfied at the exorbitant taxes levied on the exports from his country at Leh by the Maharajah's officials.

The current coins of the province are the kurus and pice. The kurus is a piece of silver, about 3 inches by 2, and about  $1\frac{1}{2}$  inch in thickness, shaped like a boat; in Kashmir its value is Rs. 166, though it weighs only 160 Company's Rs., the price being in favour of the kurus from its being almost pure silver. The pice are made of copper, about the size of our Company's pice, with a hole in the centre. They are generally to be had in strings of 50, which is called a tángá. In Khotan the value of the kurus fluctuates much, sometimes a thousand tángás of pice are paid for a kurus, at other times only 380 tángás. While I was in Khotan the rate varied from 600 to 380 tángás. There is also another coin called "kursí," shaped like the large kurus, but its value does not exceed Rs. 16, the silver being impure. Gold is not current, but is sold in small packets, each containing a little more than 3 tolás; five of these packets are given in exchange for a kurus. The Khotanees use no weights, but dry and liquid goods are sold by measures. Their cloth measure is also nearly equivalent to the English yard.

The Khán of Khotan has an army consisting of 6000 infantry and 5000 cavalry; all, however, being very badly equipped, having only Chinese weapons. He has likewise a large artillery; I counted sixty guns of brass and iron, of all sizes, up to 12-pounders. The cavalry is commanded by Masúm Khán Khojam (sahib), the khán's second son; the artillery by Hájí Abrahím, also styled Lashkar Chán, his eldest son; and the infantry by a person who calls himself a Pathán, but whom I consider a suspicious character, probably a fugitive mutineer. The latter spoke Hindostaní, and told me he had been in India, and had eaten the salt of the English. He and a trader from Jummo, and a fakír, who said he had been a sepoy, were the only persons with whom I could converse without the aid of an interpreter.

The sons of the khán are rather short, being about 5 feet 8 inches in height; the eldest is slender, and very intelligent, while the other is rather stout and dull; both have fair complexions, but the latter has Chinese features. They are generally dressed in chogas of black satin, and gold-worked caps. The eldest son is the chief personage about the khán, and is the keeper of the seals and treasury.

The usual route from Leh to Ilchí is over the Kárákoram

Pass, and through Sanjú; but there are several others, which, however, have not been much used till very lately, viz.: the Hindoták diwán, the Brinjá diwán, and the Polú route. The last of these is the best, as it lies over vast plains, where water, grass, and wood, are obtainable at every halting-place. It is reported that wheeled conveyances may be taken from the Chángchénmo Valley and Rudok to Ilchí and Yárkand by it; the only difficulty which exists is, that a portion of the route passes across the Chángtháng Plain, which is occupied by shepherds from Rudok, who closed the road last year to travellers proceeding between Leh and Ilchí. I have submitted a few remarks relative to this and other routes, which will be seen in the sequel.

The route over the Kárákoram Pass is good but very difficult, owing to the want of grass and wood, the difficulties being enhanced at certain seasons of the year, when no water is obtainable, the whole of the rivers and streams, including the great Níobrá, being frozen over. The cold is so intense that men and laden horses have been known to be frozen to death while in the elevated plain between the Níobrá and Kárákash rivers. While I was marching over this place, in November, the cold was so great that I and the natives with me could get no sleep during the nights, and our beards used to be covered with icicles while marching along the road in the sun. The thermometers which I had could not show the temperature, as they were not graduated below 15° Fahrenheit. This route is sometimes infested by Hunzá robbers, who have established themselves at the village of Shingshál, situated a little north of the Kárákoram. Only so lately as last season they plundered a very large caravan while on its way from Yárkand to Leh, and carried the traders and their goods away to their own country, where they sold the former as slaves to traders from Badakshán, Chitrál, and Khokán.

The Hindoták Road, which leaves the Kárákoram route at Sukit, lies for two marches up the Kárákash River, and then crosses over the Kíun Lun range by the Hindoták Pass. This route is short, but very difficult, and can only be used by foot passengers, on account of very difficult and extensive glaciers on the northern side of the pass.

The Brinjá route, the one I travelled over, crosses the northern ridge of the Chángchénmo Valley, and over immense plains perfectly uninhabited and void of all vegetation, with the exception of the lavender plant, which is stunted, and only found occasionally; fresh water is also very scarce, that of the numerous lakes in these plains being very brackish, and in

many places undrinkable, owing to the whole of the country being covered over with a deposit of saltpetre and soda, to the depth of from six inches to a foot. The plains have once been the beds of three vast lakes, judging from the water-marks and banks which are distinctly visible. At the northern extremity of these plains the road dips suddenly down to the Kárakásh River, where a little grass and wood are found, and thence leads up the snowy passes of Brinjgá, which are very high and difficult, from the circumstance of there being immense quantities of snow and ice on them; horses can be taken by this route, but not without a portion of the road between the Kárakásh and Brinjgá being cleared of snow and stones. From the encampment of Brinjgá the road follows down a ravine for one march, and then crosses over numerous passes and streams, including the Khotan River, which is crossed by a wooden bridge, till it gets into the plains of Khotan near Bezilíá. The route, on the whole, is very difficult, firstly from the intense cold and the want of fuel and water at the above-mentioned places, secondly, from the height of the passes of Brinjgá, and lastly, from the road between the latter place and Bezilíá being very steep and dangerous, owing to the numerous ascents and descents which are met with.

There is also another route from the sources of the Kárakásh River to Khotan *via* Shádulá; it follows the Kárakásh River the whole way, passing the above-mentioned place on the sixth day. The portion of this route between Shádulá and Khotan can only be used in the depth of winter, when the water is very low, as the river, which is of considerable size, has to be forded frequently. The Khotan people declare this is the route which was taken by Rustam, a famous hero, when he travelled from Káshgár, the place of his abode, to Rudok and Lássá.

The routes chiefly used by traders from Leh to Yárkand are those *via* Kugíár, Kalián, and Sanjú; of which the two last named are closed during the winter from the passes being high, while the former is open all the year round, but dangerous at all times, from its being infested by robbers. The taxes at Leh are now levied by Mangaljú, thánédár of Ladák, and not by contractors, as formerly. It is an extraordinary arrangement that most of the traders from Leh to Yárkand are agents of the Maharajah, and do not sell their own goods; this custom interferes with general trade. The thánédár, being the customs' officer and chief official, has power to demand whatever cess he thinks proper from traders who are not agents of the Maharajah. In conversing with the traders and others on the subject of improving the trade between Central Asia and the Punjab, I



learnt that they were anxious that a competent Government agent (a European if possible) should be located at Leh, to look after the interests of the traders, who, I must admit, are badly treated, and to maintain friendly relations with the people of Central Asia, who are very well-disposed towards the British Government; great advantages, both commercial and political, were expected to result from such a measure. There was also a wish that the several routes beyond the Kárákoram should be made safe, by the Maharajah detaching guards of adequate strength to occupy the ground within his boundary, in the vicinity of the plain called "Khérgis Jungle," on the Kugíár route, and at Shádulá and Inagar on the Sanjú route. The guard of twenty-five men which the Maharajah had at Shádulá last season proved insufficient for the protection of the káfilás, as some of them were plundered by robbers. The object of having these guards stationed along the route is to enable them to escort caravans when passing over dangerous ground. The road from Leh to the Kárákoram requires to be repaired and put into thorough order, to enable laden ponies to travel in safety, especially over the Sarsil and Khardong passes. This could be effected by the Maharajah at a very moderate outlay, and would be a great boon to traders, who, under present circumstances, almost dread going over the places referred to, owing to their horses being lamed by the sharp stones on these passes, where no footpaths even exist. That some steps of this nature are necessary is evident from the numerous carcasses of animals to be seen in every direction. If the Maharajah, following the example of the Chinese, erected post or rest houses on the road from Leh to Yárkand at the several halting-places within his territory, the inconveniences of travelling in that rugged and barren country would by no means be inconsiderably lessened.

These remarks merely refer to the shortest and most direct routes to Yárkand and Khotan, which would certainly be preferred to the route *viâ* Polú, did the former not labour under the disadvantages named. I would, however, desire to offer a few remarks on the newly suggested route from the Cháng-chénmo and from Rudok, *viâ* Chángtháng to Polú, a village five marches south-east of Ilchí. The only hindrance to this route, now that friendly relations have been established with the Khán of Khotan, is the opposition of the Tartar shepherds of Rudok, who, I am of opinion, could be induced to allow traders to pass through their country by the offer of a small pecuniary payment, guaranteed by the British Government. The opening of this route would be particularly advantageous

to the Punjab traders, as they could evade the taxes levied at Leh, by proceeding direct to Rudok, *viâ* the Hindostan and Tibet Road, up to the Chinese boundary, after which they would pass over the Chúmurtí plains to the Indus, and thence to Rudok, without touching on the Maharajah's territories. Rudok can also be reached from Kúlú and Mandí by crossing the Báráláchá Pass, and going over the Rukshú Plain to Hánle, but this is in the Maharajah's territory. The route *viâ* Rudok and Polú, though circuitous, has many advantages over others, the chief of which are—that wood, grass, and water, are obtainable at every stage; that the road passes over no rugged and high snowy ranges like the Sarsil and Kárakoram passes; that it is safe from robbers; that it leads not only to Ilchí and Yarkand, but also, *viâ* Lob, to the large and important city of Káráshahar, situated about 300 miles north-east of Ilchí, and which, with numerous other places of note, are occupied entirely by Kilmák Tartars, and are on the high road from Káshgár and Ilí to Pekin. By this route, the highly-valued Ustaríání shawl wool (superior to the Chángtháng), which is produced from the goat found in the Aktág or Thian-shan range of mountains, and a variety of other merchandise may be brought down in large quantities for the Punjab and English markets. At the present time there is an excellent opening for exports from India, because all trade between China, and the Mahomedan states of Central Asia is at a complete stand-still. The Mahomedans, being great tea\* consumers, would gladly receive Indian teas, at rates which would probably be very remunerative, while the Kilmáks and other Tartars would be excellent customers for opium, which may be sent to Káráshahar and the cities of the East. By this route Ilchí may be reached from the north-west provinces of Hindostan, viz.: from Delhi, Rohilkund, and Meerut, to Gartok (or Gartope), lat.  $31^{\circ} 46'$ , long.  $80^{\circ} 30'$ , and Rudok, lat.  $33^{\circ} 24'$ , long.  $79^{\circ} 25'$ , *viâ* Almorah and the Nití Pass, and *viâ* Mussoorie and Gangotrí, over the Nílang Pass; both the routes being very feasible, especially the Nití one.†

If the several measures suggested in the preceding paragraphs were fully carried out, not only would the trade with

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\* Whilst in Khotan I was informed that there was a great demand for tea since the stoppage of the trade with China, and that the people of the country would gladly purchase Indian teas, if obtainable. The inhabitants of Khotan are great tea-drinkers. All who visited me, rich or poor, asked for a cup of tea, which is drunk with sugar, but without milk. As a mark of respect, a cup of tea was presented to me by the Khán of Khotan himself, on my first interview with him. The brick form of tea is preferred to every other.

† Beyond Rudok and Gartope there is a village called Mínsar, lat.  $31^{\circ} 10'$ , long.  $80^{\circ} 50'$ , from which the maharajah receives a revenue of Rs. 500 per annum.

Central Asia be increased and improved, but the advantages, in a political point of view, would be considerable, as it would secure a ready market for the products of India and Great Britain, and afford us a better knowledge of the countries north of the British frontier.

The Khán of Khotan resides in the old Chinese fort, which is built of earth, and consists of an inner wall about 20 feet high, and an outer one of 5 feet, with a ditch outside. The houses in the fort, including the khán's dwelling, are all built of mud and wood, the doors and windows being of lattice-work (very like those in Kashmir). Whilst I was in Khotan, a mud wall, 25 feet high and 20 feet thick, was building round the entire city of Ilchí. Similar walls are also constructed at Jábá, Píálmá, and Gúmá, their object being to secure the inhabitants of these places against sudden attacks. The khán has done away with all the Chinese customs, except that of keeping watchmen, who patrol the streets of the fort and city at night, and make a great noise by striking a hollow piece of wood with a stick. He has also retained the Chinese instruments of torture, viz., the rack, which is worked by screws; the tread-mill, and another instrument for extorting confession, which consists of a wooden bed covered with sharp stones and gravel, on which a culprit is made to kneel, while a log of wood is laid over the knee-joints, thereby causing excruciating pain. Hanging and blowing away from guns are the methods of capital punishment; gallows are erected in various parts of the city. Flogging with a leather thong is also largely resorted to; men and women being flogged indiscriminately. The khán is trying to improve the morals of the latter, which were none of the best during the time of the Chinese, from the fact of their coming into Turkestan without their families, and keeping the women of the country.

During my stay at the capital of Khotan I employed myself in extending my researches, by making a hasty journey to the town of Kiríá, situated about 40 miles east of Ilchí. I rode there in one day, on horses posted for me by the khán; spent a day there, and returned on the third, having meanwhile left my things in Ilchí. I also visited the site of an old city near Urangkásh, from which brick-tea is exhumed. I experienced great difficulty in taking observations to the sun and the pole-star for determining the latitude of Ilchí. The khán, though he offered no objection to my using the plane-table, expressed himself decidedly opposed to my taking astronomical observations, alleging, as a reason, that his courtiers considered that it might be a preliminary to the country being taken possession of by the



British Government. In consequence of this obstruction, I had to resort to the expedient of locking the door of the court-yard fronting the house I occupied, to carry out my object. The instructions to my men to keep off intruders were not easy to enforce, as my actions were closely watched, and the khán's sons were in the habit of calling to see me at all hours of the day, and very frequently at night. After leaving Ilchí, I was not able to observe for latitude at any other place, save Sanjú, where, by the happiest chance, I put up in a house with a large hole in the roof, which admitted of my observing with the 8-inch theodolite. Here, too, as at Ilchí, I was obliged to take the precaution of locking the door. Boiling-point observations for determining heights were taken at every halting-place, Ilchí included.

It will not be out of place also to mention that, on three occasions, I was asked by some of the natives of Yárkand to visit that city, and take possession of it in the name of the British Government; but I explained to them that I had not visited Khotan in any official character, but simply as a surveyor, come to survey, and desirous of information as to passing events, and not to carry out any political objects. I was informed that the Yárkandees, Káshmirees, Baltees, Tungánees of Yárkand, and other towns and villages, had clubbed together, and collected three lacs of rupees and khilats as a present for me, if I would only come on and take up the governorship of Yárkand, as they were tired of anarchy, confusion, and constant warfare with one another, and oppression at the hands of the Khokánees. The promise of this sum of money and offers of governorship were presented to me in writing by the beg of Kugíár (parganá of Yárkand). Had not Yárkand been in a disturbed state, I would certainly have visited it in the course of my operations to collect further information; but the country and city were reported to me to be divided, and held by three separate parties or factions, viz.: 1st. The old Chinese fort and city by the Tungánees, who are Mahomedans, and were employed as paid soldiers by the Chinese, against whom they mutinied in 1863. These Tungánees are not men of the country, but come from the far east, near the confines of China Proper. 2nd. The Mahomedan town was held by Kashmirees and Baltees of Iskárdo, from the territories of Maharajah Rumbeer Sing. They have settled in Yárkand in large numbers; the former for the purposes of trade, and the latter, being agriculturists, for the cultivation of the charas plant, which they have brought to great perfection. 3rd. The country about the city was reported to be occupied by the Khokánees, who, on being pressed by the Russians, deserted

their own country, and, through the aid of the Chibchák, governor of Káshgár, took possession of the country of Yárkand. From my inquiries I am of opinion that the natives of Yárkand are very like those of Kashmir,—a servile race, constantly conquered and oppressed by the neighbouring states.

The Kháñ of Khotan, at the final interview I had with him, after entrusting a letter to me for His Excellency the Viceroy of India, together with the presents (four horses and two pairs silk carpets), all of which were delivered over by myself to the Assistant-Secretary to the Government of the Punjab, asked me to beg of the British Government to send him assistance in the shape of troops, arms, &c., and said that he would supply carriage and provisions from his boundary to Ilchí, but that he could not afford to pay the troops, as his country was poor; he, however, proposed that our Government could reimburse themselves by annexing the cities of Yárkand, Aksú, &c., to which step he would render every assistance. As far as I could observe, it seemed to me that arms and ammunition, with a few blacksmiths and tools, were all the material aid needed by this friendly power. With these, and the loan of some native non-commissioned officers to drill and discipline his troops, who are accustomed to warfare from their continual conflicts, the kháñ would be enabled to repel aggression, and preserve the independence of his territories.

Before taking my leave of the kháñ he presented me with a yellow Kímkháb choga, as a dress of honour, a Yárkand pony, and a carpet. In return, though he objected to my using the 8-inch theodolite, he expressed a great desire to possess the instrument. I explained to the kháñ that, as the arms bestowed on a soldier were the property of the State, so the theodolite in my charge was only entrusted to me for a given purpose, to enable me to carry on my duties, and that I should be disgraced if I returned without it, and would incur the displeasure of my superiors if I parted with the instrument. I also made the kháñ understand that the theodolite would be of no use to him. As a compromise, I took upon myself to tender two telescopes, the property of Government, for his acceptance, and in my own behalf made the following offerings:—A double-barrelled rifle, a revolver, a hog-skin saddle, a set of head-stalls and reins, a pair of epaulettes, which I had provided myself with in anticipation of needing to make presents on the frontier, six country swords, stationery to the amount of 15 rupees, a supply of gun-powder, shot, and gun-caps, besides cloth, and other trifling articles. To the Kháñ Bádshá of Khotan I presented the customary nazar of the country, viz.: 5 kuras, or 833 rupees, and to

his men on escort duty with me on several occasions cash to the amount of about 635 rupees.

On the 4th of October, after a stay of sixteen days, and after exacting a written promise from me to return to Khotan, if permitted to do so, the khán allowed me to take my departure. On leaving Ilchí, I first travelled along the high road which leads to Yárkand to the village of Zilgiá, at which place I halted my baggage for three days, and pushed on by post-horses to visit the villages and towns along the same road as far as Luk, in the Yárkand territory, and about 36 miles east of the city. After advancing into Yárkand as far as it was safe for me to proceed, I returned by the same route to Zilgiá, from whence I proceeded to Sanjú, in lat.  $37^{\circ} 3' 57''$ , and long.  $78^{\circ} 29' 30''$ , and crossed into the valley of the Kárákash River, by the Walágot or Sanjú Diwán Pass. I then followed the course of this river, marching up its right bank for four days, to the Maharajah's guard-house at Shádula, in lat.  $36^{\circ} 6' 15''$ , and long.  $78^{\circ} 29' 30''$ .

On my route from Sanjú to Shádula I passed several encampments of Khérghiz shepherds, on either side of the Walágot Pass. These people are difficult to deal with, being noted robbers. Twice they insisted on examining my baggage for valuables; but, finding none, they permitted me to proceed without further molestation, on being entreated to do so by Rojí, beg or governor of Sanjú, who was ordered by the Khán of Khotan to accompany me as far as the Maharajah's boundary, for the purpose of insuring me a safe passage through these Khérghiz, with whom the beg of Sanjú is on friendly terms, owing to these shepherds visiting Sanjú occasionally for the purpose of bartering their sheep for other necessities of life. The Khérghiz are Mahomedan shepherds, and are to be met with in the mountains to the north of Khotan and Yárkand, and in other parts of Central Asia. They live chiefly in hilly tracts, where good pasture is obtainable for their flocks, and are distinguished from other men of Central Asia by their wearing blue-and-white striped cloth, and being always armed, generally with matchlock, sword, and dagger.

While travelling over the route from Ilchí to Zilgiá and Luk, this portion of the country also appeared to me to resemble the plains of Hindostan, being a vast plain, without any mountains in sight. On leaving Zilgiá for Sanjú, I, for the first time after many days, observed the lower spurs of the Kíun Lun Range; and on nearing Sanjú, which is situated in a ravine immediately at the foot of these low hills, I almost fancied I was on the road between Futtehpoor and Mohun, at the foot of the Sewaliks. Quitting Sanjú, and proceeding to



the Kárákash Valley, the features of the country underwent a complete change; here no level ground was to be seen, but lofty rugged mountains intersected by deep narrow ravines, especially near the Walágot Pass, where the hills are so elevated as to be covered with snow for the greater part of the year. The last portion of the route to Shádulá is particularly pleasant, being the whole way up the Kárákash Valley, which is wide and even, and shut in on either side by rugged mountains. On this route I noticed numerous extensive plateaus near the river, covered with wood and long grass. These being within the territory of the Maharajah of Kashmir, could easily be brought under cultivation by Ladákees and others, if they could be induced and encouraged to do so by the Kashmir Government. The establishment of villages and habitations on this river would be important in many points of view, but chiefly in keeping the route open from the attacks of the Khérghiz robbers.

I reached Shádulá on the 16th of October, and was detained there no less than twenty-four days, awaiting the arrival of the coolies I had written for to Leh. This delay in the arrival of the men was caused by the miscarriage of the several letters I had forwarded to the thánédár of Ladák. During my detention at Shádulá I employed myself in ascending several peaks, both to the east and west, for the purpose of sketching the country. I also visited Khérghiz Jungle in lat.  $36^{\circ} 11' 0''$ , and long.  $77^{\circ} 46' 30''$ , and other places on the Kugíár route, to accomplish which I had to travel over a barren country, by the Khérghiz Jungle Pass, to the encamping-ground of that name. This place is named "Khérghiz Jungle" from the circumstance of its having been frequented formerly by Khérghiz. It is now visited occasionally by Kanjúti or Hunzá robbers. I should have extended my explorations in this direction further, but was deterred from doing so, through fear of meeting these robbers, who were reported at that time to be moving about these parts. I saw a large party of them on one occasion, at a distance of about two miles, through a telescope. The Kanjúti robbers (who are not shepherds) lie in wait for caravans at Aktág and Kulánuldí, on the Kugíár route, and carry their captives and plunder to a place called Shingshál, on the north of the Kárákoram. Their fastnesses can only be approached by troops operating against them from Aktág and Kulánuldí. Under these circumstances, and not wishing to run the risk of being taken captive and sold as a slave in Badakshan, I retraced my steps to Shádulá.

I finally quitted Shádulá for Leh on the 8th of November,

first marching up the left bank of the Kárákásh River, and then turning west up the broad and open valley called Sukit, at the head of which I crossed the Sukit Diwán Pass by an easy ascent and descent, and reached the undulating plateaus between the Sukit Diwán and Kárákoram passes. After this I crossed the Kárákoram Pass (height 18,317 ft.), also by an easy ascent and descent, and then followed down the course of the Baltí Púlú Ravine till it joined the Sheók River, on the right bank of which Gapshan is situated. The general features of the country travelled over since crossing the Sanjú Diwán are low barren hills and elevated plateaus, destitute of all vegetation and water, from the streams being frozen at this season of the year.

From Gapshan I continued to march down the right bank of the Sheók River, which joins a stream from the Sarsil, up which I ascended, and, crossing the Sarsil Pass, descended to the village of Changlúng in the well-known valley of the Níobrá River. I then proceeded down the left bank of the Níobrá River, *viâ* the villages of Pánimik and Chati, to the Sheók River, which I crossed about a mile above its junction with the Níobra stream, and next proceeded, *viâ* Khardong Village, over the pass of the same name, and descended to Leh, which place I reached on the 1st of December. This portion of country consists of high snowy ranges and deep valleys.

From Leh I marched to Kashmir by the usual road along the Indus River, *viâ* Khalatzí, Kargil, Drás, and Sonámarag, and reached Srínagar on the 19th of December. Winter having set in, this portion of the journey was disagreeable and difficult. The whole of the country between Lámá Yúru and Srínagar was under snow; the Drás Pass was covered over with 4 feet of snow, which being fresh, rendered travelling so tedious and tiresome that my party was benighted on the pass, and nearly perished from having to sleep without covering on the snow. I and six of the natives with me suffered severely from frost bite.

After halting a few days to recruit ourselves, and to enable the party to get cured of the frost bite, I left Srínagar for Jhelum, *viâ* Baramullá, Bágħ, and Mírpur, the other routes being closed. This being a long route, and the entire country from Srínagar to Bágħ being under snow, I was not able to reach Jhelum till the 28th of January. From Jhelum I marched down the Grand Trunk road to Umballa, and thence to Dehra Doon, which place the camp reached on the 28th of February, 1866.

As regards the geology of the portion of Central Asia visited

by me, my knowledge of the subject is very limited and imperfect, but I noticed the following in different parts of the country:—Between the Chángchénmo and Kárakásh valleys there are to be found clay-slate, shingle, and quartz, also conglomerates containing fossil shells on the watersheds of the three lakes mentioned in this report. Between the Kárakásh and Brinjá, the Kíun Lun range runs almost east and west, having a greater fall on the south than on the north. Its high spurs are composed chiefly of granite, quartz, and shingle; while the low spurs of the same range, which run down almost parallel to one another to the north, consist of sandstone and hard clay; and the soil of the plains below and to the north of these spurs from Kíríá to Sanjú is a mixture of sand and clay. The country between Sanjú and Korámlákjilga is like that to the north of Brinjá, while that between the latter place and Shádulá on the Kárakásh River is composed mostly of quartz, granite, slate, and shingle. The ground between the Sukit Diwán and Kárakoram passes, and down to Gapshan, consists chiefly of slate and shingle of various colours, conglomerate being seen in small quantities. A few fossil shells were found by me immediately below, and to the south of, the Kárakoram Pass last season.

I would mention that some of the men of the Native Establishment, viz.,—Nur Bux and Emám Allí, barkandázes, and Mátádín, lampman (the only natives of Hindostan with me), did excellent service, especially the first. I must also bear testimony to the great assistance which I received from Jumán Khán, the Turkistání interpreter, while travelling in the provinces of Central Asia. All these men, as can well be imagined, had many and trying difficulties to contend with, and I hope I may be permitted to urge their claims, and to recommend that the three men of the native establishment whom I have referred to by name be rewarded with a gratuity of six months' pay each.

My survey was based on three previously-determined Trigonometrical Stations on the Kíun Lun range, and was executed with a plane-table, which was set up on positions, mostly high hill-peaks, which are particularised in the map, from whence I sketched all the ground in view. I carried on the plane-tabling from my starting stations to Ilchí, and then round, *viâ* Sanjú, to the vicinity of the Maharajah's guard-house at Shádulá; from here to the Kárakoram Pass is a distance of six marches, or 60 miles, as the crow flies. I would willingly have carried forward my plane-tabling to the Trigonometrical stations on the Kárakoram, for the sake, not only of sketching the country, but of

verifying my work, but the winter had set in, and the intense cold rendered it impossible for me to use either pencil or brush. I nowhere attempted to take astronomical observations for longitude, but I determined the latitude of Ilchí and of Sanjú by observations to the sun and the pole star, the result of which agree with those independently obtained by the plane-table.

A trace of my plane-table sections, together with several routes in Central Asia, about which information was received when I was in that country, are herewith forwarded.

*Dehra Doon, April 22, 1866.*

## MR. JOHNSON'S ITINERARIES, ROUTE I.—FROM LEH TO ILCHI.

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearing.	REMARKS.
	Leh to—		11,345		Capital of Ladiák. Well known.
1	Tikse .. ..	13	..	E.	Large village and monastery. The village is situated in a plain, on the right bank of the river Indus. The monastery is on the end of a spur, immediately to the north of the village. Encampment in a poplar garden, to the north-east of which is a small sacred tank. The whole of the land about the village is irrigated by canals from the Indus, and is subject to inundation when the river rises above its usual height.
2	Chimre .. ..	16	..	E. & N.E.	Large village and monastery. The road runs along the right bank of the Indus for a distance of 11 miles, till it reaches a large willow garden, when it turns north up the Sakti ravine, on the right side of which the village is situated, on ground ascending in steps. The monastery is erected on the knob of a spur to the west of the village. Encampment in a small garden of poplars to the east of the village.
3	Zingrul .. ..	11	..	N.E.	Encampment at a small tank, which is in a grazing-ground belonging to the villages of Chimre and Sakti. The road runs up a ravine for 6 miles, till it reaches the large village of Sakti, which is situated at the junction of two streams, up the western one of which a road leads into Niobrá, <i>viâ</i> the village of Tamyar, while the road to Zingrul lies up that which runs down south-west from the Changlá Pass. The whole of the ground in the ravine from its junction with the Indus to the village of Sakti is well cultivated in a succession of steps. Ascent between Sakti and Zingrul very steep, being the best part of the ascent to the Changlá Pass, which renders the after ascent from Zingrul to the Changlá very easy. No houses at this place.



4	Durgú .. ..	15	..	N.E.	<p>Small village, situated at a point on the left bank of the Chushul River, from whence three roads strike off, viz., to Tainyar, to Sheók, and to Tánksí, and where stands a large storehouse belonging to the Maharajah. The River Chushul contains fish, principally trout, which are very good. The ground about the village is bare of trees, but is well cultivated. The road from Zingrul to Durgú is on the whole good, crossing the Changlá Pass at a distance of 4 miles, and then down a ravine which joins the Chushul River immediately below Durgú. At a distance of 7 miles from the Changlá Pass the road crosses the ravine, and passes for a mile over a spur to Durgú; the end of the spur is exceedingly steep and sandy. Stone wall embankments have been erected across the ravine above Sakti, with the object of collecting the snow in masses during the winter months. These masses remain below long after the snow on the hill-sides has melted,—an ingenious expedient for keeping up the supply of water for irrigation purposes during the summer. During the season of 1862 a glacier was crossed on the Zingrul side of the Changlá Pass which was found last year to have disappeared.</p>
5	Tánksí .. ..	7	..	S.E.	<p>Small village, situated on the banks of a small stream which is supposed to have once drained the Pangong Lake above its junction with the Chushul River. The village is noted for its storehouses—hides, skins, horns, and grain being kept here for the Maharajah. All coolies, provisions, &amp;c., are taken from this place by travellers visiting the Changchémo, and other parts. An attempt has been made to plant out a willow garden, but on account of the intense cold during the winter the trees remain small and stunted. There are two roads leading from Durgú to Tánksí, one along the right bank of the Chushul River, and the other along the left; the latter road crosses the river by a small bridge made of willow-branches, covered with smooth slate-slabs, which, being loosely put down, render the bridge dangerous. The road on the right bank is good, and crosses the river by a ford about <math>1\frac{1}{2}</math> mile below Tánksí. There are several roads leading from Tánksí to different parts of the country, the chief one being to Chushul south of the Pangong, and to Sherá and Igú on the banks of the Indus, <i>via</i> Sasákúl village.</p>

ROUTE I.—FROM LEI TO ILCHI—*continued.*

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearing.	REMARKS.
6	Sowár or Chírí..	13	..	E.	Encamped on the bank of a small lake, about 5 miles west of Pangong. Road good; slight ascent up ravine the whole way; passed Muglib village, 7 miles from Tãkshi. The banks of the stream are covered with grass, affording good grazing for cattle. The wood procurable for fuel is chiefly wild lavender and tamarisk. The mountains on either side abound with wild goats (snao). The lake contains fresh water, which, being supplied by the melting of the snow on surrounding mountains, does not reach until late in the evening, and flows for only a few hours. No houses at this place.
7	Chagrá .. ..	15	14,917	E. & N.	Encampment of shepherds. This place is situated in an open ravine, which descends from the ridge which bounds the Chángchéimo Valley on the south, and is a well-known grazing-ground; thousands of sheep and shawl-wool goats, belonging to the shepherds of the Pangong district, are kept here all the year round. The route from Sowár to Chagrá, within half a mile of the western end of the Pangong Lake, proceeds for 7 miles up the valley on which Sowár is situated, when it runs up the Chagrá ravine (the water of which flows into the Pangong Lake), passing the village of Lukam at 10 miles. Wild lavender-bushes very plentiful. Numerous fish met with in the Chagrá stream. The wild horse (kiang) and wild goat are to be met with on the hills on either side of the valley; these animals can be hunted with ease, since most of the hills are in gentle undulating slopes, and are covered with shingle. Salt is extracted from the water of the Pangong at a distance of 14 miles east of Lukam village; this salt is used very largely.
8	Rimdí .. ..	11	..	E. & N.E.	Halted at the junction of two streams, one of which flows north from the Masmik Pass, and the other north-east, from some high snowy peaks. Rimdí is also a grazing-ground, visited occasionally by the Pangong

shepherds. The road from Chagrá is, on the whole, very good: it lies up a ravine at a slight ascent to the Másimik Pass (18,990 feet), which is crossed at 7 miles, and then descends down the ravine to Rimdí. The ground on either side of the Másimik Pass is rather dangerous, from the earth being rendered boggy by the melting of the snow on the pass; it is necessary to have a guide from the Chagrá encampment to lead travellers over this part of the road. Kiaig, snápo, and the wild yák are to be found on the surrounding hills, of which those to the west of Rimdí are very steep and covered with snow.

Halted at this well-known grazing-ground, visited occasionally by the Pangong shepherds during winter: it is situated at the junction of the stream from the Másimik Pass with the Chángchémmo River. The road from Rimdí goes down the course of the Másimik stream; grass and wood are plentiful; of the latter there is a perfect jungle, chiefly of tamarisk-bushes, the wood of which is stunted, but of a good thickness. Hares are to be found in great numbers in this jungle. The ground about the Chángchémmo Valley is barren and rugged; low hills, rocky at the top, and covered with shingle of various colours, are to be seen in almost every direction.

Halted at the hot springs for which the Chángchémmo Valley is celebrated. These springs are visited by Tartars of the Pangong district and of No and Rúdok: by the latter chiefly during winter. The water, the temperature of which was 179° in the month of August, has an offensive smell and taste, being impregnated with soda and sulphur. It is said to be beneficial in cases of rheumatism, &c. The ground about the spring is covered with soda to the depth of about two inches; the soda is reported to be of good quality, and is exported to Leh, &c., where it is used by the people to aid in infusing their tea. This place is situated at the end of a spur on the left bank of a stream running down west from the Képsang or No Pass into the Chángchémmo River, and at a distance of about 2 miles above their junction. The road from Pamchálan lies over flat ground, covered with sand and boulders, up the left bank of the Chángchémmo River for a distance of 9 miles, when it crosses and recrosses the river: the fording being difficult in summer from the water being cold, deep, and rapid. The fording can only

9	Pamchálan ..	14	..	N.N.E.	
10	Kíam .. ..	12	17,045	..	

ROUTE I.—FROM LEH TO ILCHI—*continued.*

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearing.	REMARKS.
11	Lúm-káng ..	18	17,501	N.E.E.	<p>be effected at certain hours in the morning, when the water subsides partially. The Chángchémo Valley between Pamchalan and Kiam is wide and open, but has a wild appearance. There is a general want of vegetation till the route approaches Kiam, where grass is plentiful, and lavender-bushes are to be seen on the hill-side to the south of the springs. This part of the country abounds with wild antelope, kiang, and yak. A few hares and marmots are also to be found.</p> <p>Halted in an open ravine 4 miles south of the pass of the same name, and at the foot of the range of mountains bounding the Chángchémo Valley on the north. Road crossed the stream immediately to the north of the hot springs, and then over a low spur at 8 miles, from whence it runs up the Lúm-káng ravine, which joins the one from the Képsang Pass about 3 miles above Kiam. A small quantity of grass and wild lavender found here. Tibetan antelope very numerous.</p>
12	Nischú ..	20	17,680	N.	<p>Halted at the junction of the stream which flows down north from the Lúm-káng Pass with one that runs down from the west. Road good: for a distance of 8 miles, to the top of the Lúm-káng Pass (19,533 feet), it lay up a gradual ascent, and then descended gently down the ravine to Nischú. There was no snow on the Lúm-káng Pass at the time of crossing. The ravine in which Nischú is situated is small, and confined by low spurs from the northern Chángchémo ridge; lavender is found here in small quantities, but no grass.</p>
13	Burcháthang ..	18	17,425	N.	<p>Halted near a small stream which flows down from the south. No wood or grass met with. Road good, running down left bank of the stream, from Nischú, for a distance of 8 miles, where it leaves the stream and crosses several very low and broad spurs, going over dry bed of a small lake, and, passing a low spur, descends by a sandy ravine to this place.</p>

14	Tsothang .. ..	20	17,024	N.	<p>Halting near a small salt-water lake; road good the whole way, being over a plain which has the appearance of having been the bed of a large lake; the soil was covered with saltpetre to the depth of about 6 inches. While on the route no hills were observed in an easterly direction. No grass, but a little wild lavender, to be obtained immediately to the north of the lake, the water of which is brackish. A few Tibetan antelope were seen: these animals seem to live chiefly on the lavender-plant.</p>
15	Huzákhār .. ..	15	16,684	N.	<p>Halting about 20 yards to the east of a small lake, which is difficult of discovery, from its being in a deep hollow in a plain. The water of the lake is brackish, but a small spring of fresh water flows out of the high bank into the lake. The road, on leaving previous encampment, lay for a mile up a gentle ascent, to the height of about 200 feet, and then descended gradually for about 6 miles; the fall on the northern side being much greater than that on the southern. This small ridge separates the dry bed of the lake crossed on previous stage from a similar one to the north. When on the ridge, a traveller almost imagines he is out of the hills altogether, from the circumstance of the extent of plain country preponderating greatly over the hilly. The whole country, with the exception of that to the west, where the hills rise to a greater height, has the appearance of having been the beds of very large lakes of various levels, and seems to be subject at the present time to inundation in the months of April and May, during which period the snow melts on the hills.</p>
16	Mápothang .. ..	16	15,959	N.	<p>Halting immediately to the south of a small salt-water lake, which is situated at the foot of a spur of a hill, and at the southern end of the second great plain travelled over. The road, for a distance of 12 miles, lay down a broad sandy ravine, and then turned up a spur to the left, and descended to this place, where there is no wood or grass. The water in the lake is brackish.</p>
17	Yangpá .. ..	25	15,279	N.	<p>Halting on the left bank of a small stream, the water of which is slightly brackish, though it flows down from the Kfun Lun range, which is to the north. Route lay over an extensive plain covered with several lakes, the water being exceedingly brackish, and having a very offensive smell. The</p>



ROUTE I.—FROM LEH TO ILCHÍ—*continued.*

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearing.	REMARKS.
18	Kárákash .. ..	18	15,491	N.	<p>plain seems to have been a very large lake, judging from the water-marks to be seen on the low sandy spurs which are met with just before getting to this place, and the quantity of saltpetre which lies on the ground to the depth of about 9 inches, which is so white that, on looking down from a height, the whole plain has the appearance of being covered with snow. Wild lavender and grass to be had here in very small quantities.</p> <p>Halted on the left bank of the Kárákash River, at a distance of about 20 miles from its source in the Kün Lun range, which lies immediately to the north and east; the river flows west from this point for about 60 miles, and then turns to the north-east. A few stone huts have been erected on the right bank of the stream by Jumá Khán, ambassador from Khotan to the British Government. Route lay up a sandy ravine to the Khafái Diwán Pass (height, 17,501 ft.) for a distance of 8 miles, then over a dry bed of a large lake (the third met with), and descended by a very abrupt fall to the river. Judging from the water-marks which exist, this lake appears to have once drained into the Kárákash River. There is a good road from this place along the left bank of the Kárákash River to Shádulá, situated on the route between the Kárákash Pass and Yarkand. Large quantities of lavender and a little grass to be found here.</p>
19	Tash .. ..	19	15,583	N.E.	<p>Halted at a stone hut erected by Jumá Khán on the left bank of the Yangpá River. Lavender to be had here. On leaving the Kárákash the road lay up a ravine to the Yangí Diwán Pass (height, 19,092 ft.), the ascent to which was steep and difficult, on account of there being a large quantity of ice and snow in the ravine and on the pass. After crossing the pass the road runs down a ravine to this place. The bed of the Yangpá River is a gold-field, and was much frequented about three years ago by Khotan</p>

people, for the purpose of digging for gold. On reaching the top of the Yangi Diwán Pass I was surprised to notice the great change in the general features of the country, which to the north is rugged and broken, resembling the southern Himalayas, while on the south it is almost a plain. The Yangi Diwán Pass can only be crossed during the months of June, July and August. It is reported that this route was discovered and used for the first time by Jumá Khán.

Halted near a stone hut, situated near the junction of the Yangpá River with a large stream which flows down north-east from the Naiá Khán Diwán Pass. The road is steep and bad, from its being down the rocky bed of the Yangpá River. No wood or grass obtainable.

Halted near some underground huts occupied by shepherds from Khotan, in charge of cattle belonging to the king. This is a famous grazing-ground, the grass growing to a height of two to three feet. The hill-sides are covered with the wild senna-plant, which is used as a medicine by the people of Central Asia. Wild goats (snápo) and large chikoor are found here in large numbers. The road from Khushlash langar to this place was bad; for half the distance it ran up a rocky ravine, and crossed over a large glacier and the Naiá Khán Diwán Pass (height, 18,659 ft.), the ascent to which is very steep. After crossing the pass, it ran over a small glacier, and descended very abruptly to Brinjá. The passes—viz., the Yangi Diwán and the Naiá Khán Diwán—are in the Kün Lun range of mountains, which are for the most part very rugged and steep, and are composed chiefly of loose shingle, with granite rocks above.

Halted at a stone hut on the right bank of the Brinjá River. The road is particularly rocky and dangerous, from passing over a succession of steep and rugged lateral spurs running down into the river from two high ranges on either side, the bed of the stream is therefore very contracted. Large quantities of coarse grass and reeds found here.

Village of about 500 houses, which are chiefly occupied by convicts and exiles from the cities of Káshgar, Yarkand and Khotan. The road for the

20	Khushlash langar	13	15,048	N.	people, for the purpose of digging for gold. On reaching the top of the Yangi Diwán Pass I was surprised to notice the great change in the general features of the country, which to the north is rugged and broken, resembling the southern Himalayas, while on the south it is almost a plain. The Yangi Diwán Pass can only be crossed during the months of June, July and August. It is reported that this route was discovered and used for the first time by Jumá Khán.
21	Brinjá .. ..	22	11,755	N.	Halted near a stone hut, situated near the junction of the Yangpá River with a large stream which flows down north-east from the Naiá Khán Diwán Pass. The road is steep and bad, from its being down the rocky bed of the Yangpá River. No wood or grass obtainable.
22	Kapás .. ..	10	10,653	N.W.	Halted near some underground huts occupied by shepherds from Khotan, in charge of cattle belonging to the king. This is a famous grazing-ground, the grass growing to a height of two to three feet. The hill-sides are covered with the wild senna-plant, which is used as a medicine by the people of Central Asia. Wild goats (snápo) and large chikoor are found here in large numbers. The road from Khushlash langar to this place was bad; for half the distance it ran up a rocky ravine, and crossed over a large glacier and the Naiá Khán Diwán Pass (height, 18,659 ft.), the ascent to which is very steep. After crossing the pass, it ran over a small glacier, and descended very abruptly to Brinjá. The passes—viz., the Yangi Diwán and the Naiá Khán Diwán—are in the Kün Lun range of mountains, which are for the most part very rugged and steep, and are composed chiefly of loose shingle, with granite rocks above.
23	Káragoták ..	16	8,735	N.	Halted at a stone hut on the right bank of the Brinjá River. The road is particularly rocky and dangerous, from passing over a succession of steep and rugged lateral spurs running down into the river from two high ranges on either side, the bed of the stream is therefore very contracted. Large quantities of coarse grass and reeds found here.

ROUTE I.—FROM LEH TO ILCHI—*continued.*

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearings.	REMARKS.
24	Píshú .. ..	15	8,643	N.	<p>first portion is very rocky, lying down the Brinjá River. Poplars and other trees are very numerous; cultivation is carried on, but not to a large extent. This place is situated on some flat ground on the right bank of a large mountain torrent which flows from a snowy ridge to the west, and is noted for the "yashm," a description of agate stone, prized by the Chinese, and which is met with in the stream. The inhabitants of this village are particularly uncivil to travellers, and show disrespect even to the officials of the country. The convicts are known by their beards being kept shaved, and their faces branded with round marks.</p> <p>Village of about 20 houses, situated in a broad ravine running from the east, with only a small stream of brackish water in it. There are no trees about the place, but a good deal of wheat and barley cultivation in the flat ground on either side of the stream. The road on leaving Káragoták crosses by a wooden bridge the Khotan River, which flows from the Kun Lun range, and is very deep and rapid. After passing over a very steep ascent, the road goes over extensive grassy slopes inclining northwards, and descends gently to the village. No water to be had on the route. It is reported that a large quantity of salt is extracted from the water at this place, and exported into Khotan.</p>
25	Búá .. ..	10	7,692	N.	<p>Village of about 100 houses, situated on a ravine very like that of the Píshá. No trees, and only a little cultivation. This place is also a well-known grazing-ground; thousands of sheep and goats belonging to Khotan are kept here. Road very good, passing over several low spurs composed mostly of clay and sandstone. The portion of country travelled over between Káragoták and Búá has the appearance of having been the bed of a lake.</p>

26	Yangí langar ..	29	5,930	N.	Village of about 30 houses, situated on a patch of flat ground on the right bank of the Sirísí stream, which contains but little water, and rises in the low hills to the south-east. The road crossed a low sandstone ridge, running east and west, by the Bishá Diwán Pass (height, 10,408 ft.), and then down the rocky bed of the Sirísí stream to Yangí langar. The ascents and descents of the Bishá Diwán Pass are steep, and the bed of the river is full of large rocks, which makes the journey very troublesome. A few fruit-trees and cultivation at this place, which originally was a post or guard-house of the Chinese.
27	Kúmát langar ..	5	5,795	N.W.	Village containing 150 houses, situated on the right bank of the Sirísí stream, and at the foot of the last low range of hills to be seen in the direction of Khotan. Road good, along the flat ground on the right bank of the stream. On reaching Kúmát langar the ground resembles the Sewaliks, at the entrance to the Mohan Pass, the country to the north being a vast plain.
28	Beziliá ..	10	4,678	N.W.	Village containing 1000 houses and a small bazar. It is situated in the plains, at a distance of 3 miles in a north-easterly direction from the Khotan River, the water of which is brought down in canals, for the purposes of irrigation. The whole of the ground for miles round this village is well cultivated, and in many parts is wooded with fruit-trees of various descriptions. Road lies over a sandy soil, till within 2 miles of the village.
29	Ilchí .. ..	11	4,329	N.W.	Capital of Khotan; a large town. It is on the left bank of the large river named after the province. The road passes the whole way through gardens, cultivation, and small villages, until it approaches Urangkásh, when it follows the great street of the bazar, crosses the Khotan River, and leads into Ilchí. The Khotan River is forded in three streams, which is a difficult undertaking when the river is high, as the water is then very deep and rapid. On arriving at Ilchí, a traveller feels as if he had left the hills altogether, and was in the plains of Hindustan, especially when he looks around him and sees no hills in any direction, excepting on clear days, when the lower ranges of the Kiun Lun are visible. The city of

ROUTE I.—FROM LEH TO ILCHÍ—*continued.*

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearing.	REMARKS.
					Ilchí contains about 40,000 inhabitants, most of whom are men of the country; the only strangers being Kashmirees and Cabulees, who are few in number, and chiefly traders. It is a well-known manufacturing town, and celebrated for its rich carpets, felts, and cloth; also for raw silk, which is very extensively cultivated in the gardens round the city, and in the neighbouring villages. The bazar of Ilchí, where a fair is held every Thursday, is situated to the west of the old Chinese mud fort, and consists of a long street running east and west, with four lateral ones—the principal street being covered in with a roof of reed matting. The Khân of Khotan has shown some enlightenment (the result of personal observation when travelling through India in 1862) in the way in which he has laid out his military cantonment, which is to the east of the fort. The lines for cavalry, infantry and artillery are separate from one another, with distinct parade-grounds. The town of Khotan, the Chinese fort, and the cantonments are all embraced within a fortified wall, about 9 miles in circumference.

ROUTE II.—FROM ILCHÍ TO LEH, VIA THE KARAKORAM PASS.

Ilchí to—				
1	Jábá .. ..	21	4,124	w.
				Village of about 300 houses, situated on the right bank of a branch of the Karakash River; this village is called old Jábá. The new village, containing about 1500 houses, is situated on the left bank of the above river, and is surrounded by a fortified wall, similar to the one round Ilchí. The



road from Ilchí to Jábá passes through a well-cultivated country, resembling a garden, till it reaches the Karákásh River, which is here divided into several streams, all of which are crossed by wooden bridges. Passed numerous small villages on the route, also Dúshambá bazar, at a distance of about 8 miles from Ilchí. The main street of this bazar, in which a fair is held every Wednesday, is about a quarter of a mile in length, and runs from east to west; it is covered in with matting like the one in the Ilchí bazar.

Village of 1000 houses, situated in a well-cultivated plain, and dotted with fruit-trees. On leaving the village of old Jábá, the route, after crossing a branch of the Karákásh River called Siriksú, by a wooden bridge, passes through the fortified village of the same name, and then over a sandy plain, along which small post or rest houses are met with at intervals of 3 miles, to Piálmá. The battle of Piálmá was fought on this plain in April, 1864, between the Khotanees and Andajánees, or Khokánees, about 3 miles east of Piálmá. Numerous tombs mark the site of the battle-field, which is partly covered with long reeds and bushes. In this battle it is reported that 70,000 men were engaged on either side; that the Khotanees were the victors, and they captured 60 guns, 2500 prisoners, the camp and baggage of the enemy, including 6000 camels, 2000 horses, and 1500 donkeys. I noticed a boat on the branch Siriksú of the Karákásh River near Jábá. It was constructed of poplar, and built by Kashmirees. It was twenty feet long, by twelve wide, and was flat-bottomed. Immediately to the west of new Jábá, is a chain of posts, or guard-houses, of the Chinese, running north and south. These post-houses extend from the hills to the south, to Aksú to the north, and are at intervals of  $\frac{1}{2}$  a mile; they defined the boundary line between the provinces of Yárkand and Khotan during the time of the Chinese rule, and were still such, until the battle of Piálmá, when the Khán of Khotan advanced his boundary line to the town of Gúmá.

Village of about 1500 houses, fortified in the same manner as Jábá. The village is situated in an open plain, near a small stream, which flows down from the spurs of the Kíun Lun range to the south. There is a good deal

w.

4,342

26

Piálmá .. ..

2

w.

4,396

17

Zilgá or Zelingá

3

ROUTE II.—FROM ILCHI TO LEH, VIA THE KARAKORAM PASS—*continued.*

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearing.	REMARKS.
4	Sanjû .. ..	23	6,134	w. & s.w.	<p>of cultivation about the village, also fruit-trees. The route from Pálmá to this place lies over a sandy plain, sloping gently from south to north, in which three post-houses are met with at intervals of 5 miles. The water at these resting-places is exceedingly brackish, and is used by the natives of the country in preparing their food in lieu of salt.</p> <p>A large but scattered village, containing about 7000 houses, situated immediately below the first low hills to the south in an open ravine, which comes down from a high range running east and west, and separates this portion of the country from that drained by the Karakash River. Sanjû, with its encampments of Khérghiz shepherds, &amp;c., is considered a parganá, and was subject to Yárkand until my visit to Khotan, when Rogi, the beg, or governor, accompanied by the begs of Zilgá and Gúiná, came to Khotan, and agreed to transfer their respective parganas to the Khañ of Khotan. The road from Zilgá lies over a sandy plain, sloping from south to north, void of vegetation for a distance of about 17 miles, when it advances down a steep descent of about 300 feet to the ravine in which Sanjû is situated. Extensive cultivation of wheat, barley and Indian corn is met with here, and numerous fruit-trees, and small vegetable gardens containing turnips, radishes, onions, spinach, &amp;c.</p> <p>Village of 5 houses, inhabited by shepherds (not Khérghiz) of Sanjû. There being good grazing-ground about this place, large flocks of sheep and yáks from Sanjû are sent here.</p>
5	Kivís .. ..	11	6,761	s.	<p>Situated on the Sanjû ravine, and sometimes used by travellers as a halting-place; there are no huts, &amp;c., here. Bushes of willow and tamarisk very numerous along the banks of the stream. The road from Kivís was very bad, and the route rendered difficult owing to the ravine up which it runs being very confined, and the necessity of fording the stream very frequently, the bed being full of large boulders.</p>
6	Páí .. ..	8	7,199	s.	

7	Korámákjilgá ..	14	10,239	s.	<p>A Khérghiz encampment and grazing-ground, situated near the junction of some small streams which are the source of the Sanjui River, and about 8 miles to the north of a snowy range, which is the watershed of the Kárakásh River on its western side. The ground about the place is covered with short, fine grass, which is said to afford good pasture to the flat-tailed sheep and yaks of the Khérghiz shepherds, who are found here in large numbers all the year round. These Khérghiz are quite independent, and are reported to be great robbers. During the time of the Chinese, they always kept a guard of 50 men at this place, to prevent the natives leaving the country, and to keep strangers from entering it, without due authority from the Khán Ambán of Yárkand. Numerous chikoor are met with at this place.</p>
8	Zakoñgrá ..	18	10,210	s.	<p>Halting-ground used by travellers and caravans on their way from Yárkand to Ladák, and by Khérghiz shepherds. The road from Korámákjilgá lies for a distance of 2 miles over the grassy slope of a ravine, after which up a steep ascent to the Walágót or Sanjui Pass (height, 16,763 feet), and then descends down a ravine to this place, which is situated on the right bank of a stream which flows down from the range which is the watershed of the Kárakásh River on the south and drains into that river. The road over the Walágót Pass is steep and rocky, and dangerous at the time I crossed, from the circumstance of fresh snow having fallen, and which partially closed the holes and crevices in the rocks. The road at the top of the pass for about 60 feet on either side runs over solid rock.</p>
9	Pílátargásh..	22	10,905	s.	<p>Khérghiz encampment situated on the left bank of the Kárakásh River, which flows through a broad valley. The road from Zakoñgrá to Pílátargásh is good; it lies down the stream, on which the latter place is situated, for a distance of 10 miles, till its junction with the Kárakásh River, and then proceeds up the left bank of this river to the encampment. The whole of the country on this march is a grazing-ground, used by the Khérghiz shepherds, who were very numerous, until partially destroyed by Mirzá Abúkákár, a chief of Badakshán, who is reported to have invaded this part of the country about 60 years ago, to punish the Khérghiz for their</p>

ROUTE II.—FROM ILCHI TO LEH, VIA THE KARAKORAM PASS—*continued.*

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearing.	REMARKS.
10	Oihuk .. ..	26	10,715	s.	<p>depredations on the Yárkand caravans. The ruins of two forts, said to have been erected by Abukákar, still exist, one of which, Inagar (height, 10,665 ft.), is at the junction of the Zakoigrá ravine with the Karákásh, and the other at a point from whence a road branches off to Yárkand from the Sanju route. This road is not well known, but it is reported to be occasionally used by foot passengers.</p> <p>Halted near an encampment of Khérghiz, on the left bank of the Karákásh River. This place is also used as a grazing-ground by the Khérghiz, and by the traders from Leh, on account of the long grass, which affords such good pasture for the horses of the latter as to induce them to halt here several days to recruit their animals after the difficult journey over the Karákoram Pass. It is reported that the land about this place had been cultivated at some previous period by the followers of Mirzá Abukákar, and which appeared to me evident, from the land being laid out in steps, resembling the fields on the banks of the Indus near Leh. The road from last encampment was very good, being along the left bank of the Karákásh River. It passes the ruins of an old fort named Mirzá Abukákar, after the invader from Badakshán, and which is situated at a point from whence a road leads to Yárkand. This road runs up a ravine for two marches, and then crosses the Kálián Pass, which is situated about 30 miles to the south-west of the Walagót Pass, and on the same range, and proceeds down a ravine to Yárkand, <i>via</i> Kálián village, at which place the Chinese always kept a guard of 50 men to prevent strangers from entering the country by this route, which is one of the three principal ones to Yárkand from Leh, but is not used in winter, owing to the pass being a high one. A horseman, it is said, can reach Yárkand from this place on the sixth day.</p>

Encampment near a guard-house, belonging to the Maharajah of Kashmir, who had a guard of 25 sepoy and 50 Tartars at this place, to protect the *kafilas* or caravans from Hunzá and Kherghiz robbers while passing through this portion of the country. Shádulá is situated on the left bank of the Kárakash River, which flows from this to Ilagar fort, through a broad and open valley, called Sirkhiá, from the soil of the country being of a red colour. Brushwood and grass are to be had in large quantities along this route. A road leads from Shádulá to Kherghiz jungle, situated on the Kugíár route from Leh to Yárkand. Leaving Shádulá, it runs west up a ravine, crosses the Kherghiz Jungle Pass (height, 16,795 ft.), which is on the same ridge as the Walagot and Kalián ones), and descends a ravine to Kherghiz jungle (height, 10,978 ft.). This route is very easy; laden camels were brought over when I was at Shádulá. It is not much frequented by traders, on account of its being dangerous from the Hunzá robbers, who are reported to frequent the country about Kherghiz jungle, and also the Kherghiz who are to be met with on the second march from Shádulá. It is chiefly used by traders from Yárkand to Leh proceeding by the Kugíár route, as a means of escaping from being taken captives by these robbers, after their goods have been plundered. These traders, as a general rule, abandon their horses, goods, &c., on the appearance of danger. The general appearance of the country is bare and rocky, like that about the river Indus at Leh, with the exception of the hills being somewhat lower and there being less snow on them.

Halted at a place where the last patch of grass is to be found in the valley called Sukit, and about 6 miles west of the pass of the same name. This valley is a grazing-ground much used by traders from Leh to Yárkand, as it is the first at which grass and wood are obtainable after leaving Nióbrá, and travelling over the barren ground about the Kárakoram for 8 days. The route lay up the left bank of the Kárakash River for 8 miles, to the point at which that river turns east, and then up the right branch of the Sukit stream, which rises in the ridge which is the western watershed of the Kárakash River.

11

Shádulá

.. ..

6

11,509

s.

12

Sukit ..

.. ..

29

13,499

s.

ROUTE II.—FROM ILCHI TO LEH, VIA THE KARAKORAM PASS—*continued.*

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearing.	REMARKS.
13	Malakshá .. ..	30	16,475	s.w.	<p>Halted at a spot used as an encamping-ground by caravans, situated on the left bank of a stream which flows down from the east, and is the source of the Kugíar River, which, after joining others, runs down to Yárkand. The Kugíar road from the Karákoram Pass to Yárkand starts from this place, and follows the course of the above stream, passing the grazing-grounds of Khérghiz jungle, after which it crosses a low spur of the Kálián range by the Kugíar Pass to the village of the same name, and thence to Yárkand. The road from Sukit runs up a ravine, at a slight ascent, for 9 miles to the Sukit diwán Pass (height, 18,227 ft.), and then down a similar descent to Malakshá, passing an encamping-ground called Chibrá (height, 16,489 ft.), situated about 12 miles east of the Sukit Pass. I noticed some old ruins of mud huts at Chibrá, which I was informed were built, as stables, by a chief of Yárkand, who, with a party of horsemen, many years ago entered the Níobrá Valley, and plundered the Tartar inhabitants who were subject to the Rájá of Leh. No wood or grass to be had at Malakshá; water is likewise not obtainable from the end of October to end of April, in consequence of the streams being thickly frozen over.</p>
14	Baltí Bráksá .. ..	33	17,578	s.	<p>Halted under a rock used as a place of shelter by travellers, situated on the left of the sandy ravine which comes down from the Karákoram Pass to the south. The route from Malakshá lay for 8 miles over the end of a lower spur running down from the east, and then up the stream which comes down from the Karákoram. The encamping-grounds of Diblá Shérgol, and Chájoshjilgá (height, 15,963), were passed at 16 and 23 miles; at the former place a little grass was seen. By proceeding north across the hills from Dibla Shérgol, the Karákash River may be reached in four days.</p>



15	Baltí Púlu .. ..	22	16, 167	s.w. & s.	Encamped near three small stone huts which are situated about 10 miles s.e. of the Kárakoram Pass, and near the junction of the stream from that pass with one that flows down from the west; no water, wood, or grass could be obtained here. The route ran up a broad open ravine to the Kárakoram Pass (height, 18,317), the ascent to which is easy, and then down a similar one to Baltí Púlu. The general features of the country since leaving Sukit are low barren hills and plains. Though the ground travelled over was almost a plain, still this part of my journey was very difficult, owing to the country being under snow.
16	Gapshan .. ..	17	..	s.e.	Halted at a small stone hut situated on the right bank of the Sheók River, where wood and grass are to be had in small quantities. The road lay down the Baltí Púlu stream, till its junction with the Sheók, which flows down from the great Kárakoram range to the west, and, after crossing this river, follows its course along the right bank. The Sheók River, at the time of crossing it, was only eight feet wide, and frozen over.
17	Sarsil or Sasir .. ..	22	..	s.e.	Stone house erected last season by the Maharajah of Kashmir, situated on the left bank of a stream which flows down from the Sarsil Pass, with a little wood and grass on either side of it. The route from Gapshan passes some large glaciers, and lies down the right bank of the Sheók River, till its junction with the above-mentioned stream, whence it ascends to Sarsil. This route travelled over by me from Baltí Púlu is called the "Khumádán," and can only be used in winter, when the water in the river is frozen. There is another route from Baltí Púlu to Sarsil from the Depsang Plains, but it is only used in summer, on account of the cold in these plains being very severe in winter. Numerous snápo (wild goat) were seen near the encamping-ground.
18	Tútídlák .. ..	12	..	s.	Encamped near some huts occupied by shepherds from Níobrá during the summer, and situated on the left bank of the stream of the same name, which comes down from the Sarsil Pass, and from which the encamping or grazing ground is 9 miles to the south. The road over the Sarsil Pass was difficult, owing to late heavy falls of snow partially closing the fissures

ROUTE II.—FROM ILCHI TO LEH, VIA THE KARAKORAM PASS—*continued.*

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearing.	REMARKS.
19	Changlúng .. ..	9	..	S.S.W.	in the glaciers, which are met with on the pass, and thereby rendering travelling dangerous. The Sarsil Pass is in the high snowy range of mountains which separates the Sheók from the Nióbrá River.
20	Pánímik .. ..	8	..	S.W.	Village in the Nióbrá Valley, in the Ladák district. The road led down the Tútálák ravine for 6 miles, then crossed a low spur, and descended to the village, which is celebrated for its hot springs.
21	Tagar .. ..	21	..	S.	Village in Nióbrá (district Ladák). River frozen.
22	Chatí .. ..	7	10,674	S.E.	Do.
23	Khardong .. ..	10	..	S.E.	Do., situated immediately below, and to the north of, the pass leading into Leh from Nióbrá. The road lay up a ravine after crossing the Nióbrá River, which was about 20 yards wide, but frozen over.
24	Leh .. ..	22	..	S.W.	Do., crossed the Khardong Pass (height about 18,000 feet), on which there was 3 feet of fresh snow.

## ROUTE III.—FROM ILCHI TO KIRIA.

	Ilchí to—				Described in Route No. I.
1	Dúl .. ..	14	..	..	Village of 50 houses, situated below the end of a long spur from the Kíun Lun range. The road for the first part was that pursued by me on my way to Ilchí from Beziliá, as far as Urangkash bazar (height 4121 feet), after which it left that route and turned to the left, passing through cultivation and fruit-gardens the whole way to Dúl. Irrigation is carried on at Dúl by the canals which pass through the ground about Beziliá.
2	Chirá .. ..	19	4,538	S.E.	Bazar and town, containing about 8000 houses, is situated about 4 miles to the west of the river of the same name. The country travelled through to-day was like that between Ilchí and Dúl. A fair is held in the bazar on every Tuesday, in which most of the articles manufactured in Ilchí are bartered for gold, which is mostly brought down from the mines to the east of Kiria, though small quantities are worked in the river near this place. On the route, I noticed that the desert of Taklá Makán skirted the vegetation, at a distance of about 3 miles, all along on the north.
3	Karákar .. ..	16	..	S.E.	Village of 60 houses, situated between the Chirá and Kíríá rivers. The road from Chirá to this place was lined with cultivation, &c., which is watered by canals from the Chirá River. This small river was forded about 7 miles east of the above-mentioned place.
4	Kíríá .. ..	20	4,755	N.E.	Town and bazar, containing about 7000 houses, is situated on the right bank of the river of the same name, and at a distance of 9 miles above its junction with the Chirá stream. This place, like Chirá, is surrounded with cultivation and gardens. In the bazar, which resembles that of Ilchí, a fair is held on every Sunday, when the chief trade consists in bartering the cloth, carpets, &c., manufactured in Ilchí, for gold, which is brought down in large quantities from the mines to the east of this place. Kíríá is much frequented by Kashmirees and Cabulees for the purpose of purchasing gold, which is reported to be cheaper and of a better quality at this mart

ROUTE III.—FROM ILCHI TO KIRIA—*continued.*

Number of Marches.	Place.	Estimated Distance in Miles.	Height in feet above sea-level.	General Bearing.	REMARKS.
					than at any other. The road from Kárákar lay over a sandy plain, till it crossed the Kíríá River, after which it passed through well-cultivated fields, &c. The Kíríá River, which rises in the eastern portion of the Kün Lun range of mountains, and flows north, is crossed by a wooden bridge when the water is low, but is forded in three streams in the summer months, the temporary bridges being carried away every season by the rises in the river, occasioned by the melting of the snow in the mountains. Here, as at Chirá, the Taklá Makán desert is to be seen at a distance of 3 miles to the north. Its general appearance is that of a barren range of low hills. The soil and features of the country about Kíríá are very like those of the ground about Ilchí. Only last season a new route was discovered from Kíríá to Leh, <i>via</i> Pold village, which is situated about 14 miles south-east of this place, and higher up the Kíríá River. It is reported a horseman can get from Ilchí to Leh by this route in 14 marches.

## ROUTE IV.—FROM ZILGIA TO YARKAND.

	Zilgía to—	..	..	..	Described in Route No. II.
1	Múnj .. ..	14	4,464	w.	Village of about 60 houses, situated on a small stream which comes down from the Sanjü River; some cultivation and a few fruit-trees are to be seen. The road from Zilgía lays over a barren plain the whole way.
2	Gúmá .. ..	16	4,229	w.	Small town, situated on the Sanjü River, and about 30 miles north of Sanjü village; contains a bazar, where a fair is held every Monday, and about 6000 houses, all of which are enclosed by a fortified wall, like that round

Ilchí. A force of 800 cavalry and 4 guns, belonging to the Kháñ of Khotan, is located in this place, as a check against any sudden attack from the people of Yárkand. Gúmá is celebrated for the superior charas, which is produced in large quantities. The bazar is small, and similar to the one at Ilchí. I was informed that this was a great mart between Yárkand and Khotan before the late disturbances, since which trade has been at a standstill, on account of the Yárkandees being prevented by the invading Khokanees from visiting this place. The only persons that carry on a little trade are the Kashmirees, of whom there are only a few in the bazar. Extensive cultivations of grain of various kinds is carried on, both inside and outside the fortified wall. The road from Múnjí lies over a barren plain, void of vegetation, with the exception of a few fields about the village of Chutar, which is 9 miles from Múnjí.

Village of about 100 houses, situated on a small stream which flows from the south; extensive cultivation about the place; also a few fruit-trees. The village belongs to Yárkand. The road from Gúmá lies over a sandy plain, in which stunted tamarisk-bushes were met with occasionally. The small village of Chúlák, consisting of 6 houses, was passed at 12 miles.

Town and bazar belonging to Yárkand. Kargalik is situated at the point where the various routes from Leh and Ilchí to Yárkand unite.

Bazar.

Town and bazar.

City. Yárkand River to be crossed about a mile to the south of the city. Yárkand is reported to contain about 120,000 inhabitants, composed of natives of Khokán, Badakshán, Kuchár, Cabul, Baltistán, and a few Hindostanees. The city is divided into three portions, viz.: the Mahomedan town, Chinese town, and Chinese fort and cantonment. Mahomedans were not permitted to enter the two latter during the time of the Chinese.

Derived from Native information.

3	Luk	.. ..	26	4,182	w.	
4	Kargalik	.. ..	6	4,118	w.	
5	Ekshambá	.. ..	12	..	w.	
6	Poshgáoní	.. ..	6	..	w.	
7	Yárkand	.. ..	12	..	w.	

## ROUTE V.—SANJU TO KARGALIK (DERIVED FROM NATIVE INFORMATION).

Number of Marches.	Place.	Estimated Distance in Miles.	REMARKS.
	Sanjú to—		
1	Bára' .. ..	48	Pass Bitorgák and Kushtíák villages.
2	Kargalik .. ..	19	Town.

## ROUTE VI.—SANJU TO KARGALIK, VIA KALIAN (FROM NATIVE INFORMATION).

	Sanjú to—		
1	Kalían .. ..	40	Village.
2	Buríá.. ..	17	Do.
3	Bisharák .. ..	17	Do.
4	Kargalik .. ..	18	Town.

## ROUTE VII.—KIRIA TO CHACHAN AND LOB (FROM NATIVE INFORMATION).

	Kíría to—		
1	Usalún langar ..	16	A post-house.
2	Nia .. ..	17	Village, 50 houses.
3	Kumrábád langar	16	10 houses.
4	Khadálák .. ..	20	Encampment and gold mine.
5	Akmarán .. ..	17	Do. do.
6	Kukmárán .. ..	16	Do. do.
7	Egar .. ..	19	Do. do., and well.
8	Chákálák' .. ..	17	Grazing-ground.
9	Cháchan .. ..	16	Village, 500 houses, and cultivation.
10	Encampment ..	20	Shepherds' tents.
11	Do. .. ..	21	Do.
12	Do. .. ..	18	Do.
13	Do. .. ..	17	Do.
14	Do. .. ..	19	Do.
15	Lob .. ..	20	Village and lake (large, with fish in it.)

ROUTE VIII.—ILCHI TO SHADULA, VIA THE HINDO TAK DIWAN PASS  
(FROM NATIVE INFORMATION).

Number of Marches.	Place.	Estimated Distance in Miles.	REMARKS.
	Ilchí to—		
1	Largong .. ..	15	Village.
2	Papúá .. ..	16	Do.
3	Olgíá .. ..	15	Do.
4	Mitak .. ..	15	Shepherd encampment
5	Chách .. ..	16	Village.
6	Nissá .. ..	19	Do.
7	Karáz .. ..	12	Shepherd encampment.
8	Pushíá .. ..	16	Khérghiz encampment.
9	Mazár .. ..	16	Do.
10	Halting-ground	24	Right bank of Kárakásh River; after crossing the Hindo ták diwán Pass.
11	Do.	20	Left do., do.
12	Do.	24	Left do., do.
13	Shádulá .. ..	28	<i>Vide</i> Route No. II.

ROUTE IX.—MALAKSHA TO KARGALIK (FROM NATIVE INFORMATION).

	Malakshá to—		<i>Vide</i> Route No. II.
1	Káfálúng .. ..	18	Encamping-ground.
2	Imbulgár .. ..	18	Do.
3	Khérghiz jungle	24	Do.
4	Yangí diwán ..	12	Do.
5	Túrígíl .. ..	12	Do.
6	Dóbá .. ..	15	Cultivation.
7	Túálák .. ..	30	Do.
8	Ak Masíd .. ..	22	Encampment of shepherds; crossed Tofá diwán Pass.
9	Kugíár .. ..	18	Village and pargana.
10	Beshtúrák .. ..	15	Village.
11	Kargalik .. ..	14	Town.

## ROUTE X.—ABUKAKAR FORT TO KALIAN (FROM NATIVE INFORMATION).

Number of Marches.	Place.	Estimated Distance in Miles.	REMARKS.
	Abúkakar Fort to—		<i>Vide</i> Route No. II.
1	Dúra .. ..	12	Encamping-ground of Khérghiz.
2	Bostán .. ..	13	Do. Cross Kalían Pass.
3	Chadartásh ..	16	Do.
4	Katái Tám ..	9	3 towers and post-house.
5	Upálák .. ..	20	Village.
6	Kalían .. ..	25	Village and pargana.

## ROUTE XI.—YARKAND TO AKSU (FROM NATIVE INFORMATION).

	Yarkand to—		
1	Achtákú .. ..	10	Village.
2	Lailák .. ..	14	Do.
3	Mainák .. ..	14	Do.
4	Alagák .. ..	12	Do.
5	Akmarálá .. ..	16	Do.
6	Shímál .. ..	14	Village.
7	Lál Masíd .. ..	15	Small town.
8	Charwásh .. ..	13	Village.
9	Tanshoká .. ..	17	Do.
10	Chadarkúl .. ..	14	Do.
11	Yákakodák .. ..	12	Do.
12	Sogat .. ..	12	Do.
13	Chalán .. ..	10	Do.
14	Saiortáng .. ..	12	Post-house.
15	Kumbásh .. ..	10	Village on the high road from Yarkand to Pekin.
16	Aksú .. ..	10	Town and fort.



## ROUTE XII.—YARKAND TO KASHGAR (FROM NATIVE INFORMATION).

Number of Marches.	Place.	Estimated Distance in Miles.	REMARKS.
	Yárkand to—		
1	Kúkarábád ..	19	Small town.
2	Kizil .. ..	18	Do.
3	Yangísháhar ..	18	Large town.
4	Káshgár .. ..	18	City and fort. Káshgár was a small province of China till the late rebellion, when it became independent, and has since been governed by a person called Khojá (saint). The city, which is situated on the road from Yárkand to Khokán, is said to contain 30,000 inhabitants, and is much frequented by Khérghiz shepherds from the hills to the west. The fort is reported to be a strong one, and the Chinese are said to have held the place against the Mahomedans for thirteen months after Yárkand was surrendered.

## ORTHOGRAPHY OF NATIVE NAMES AND WORDS.

The following rules have been observed in spelling the native names and words which occur in the foregoing papers, except in the cases of well-known places, whose orthography, as established by custom, has been adhered to:—

The first vowel sound in	<i>mama</i>	will be indicated by	<i>a.</i>
The second	„	„	<i>á.</i>
The vowel sound in	<i>say</i>	„	<i>e.</i>
„	<i>den</i>	„	<i>é.</i>
„	<i>bit</i>	„	<i>i.</i>
„	<i>deep</i>	„	<i>í.</i>
„	<i>hope</i>	„	<i>o.</i>
„	<i>cot</i>	„	<i>ó.</i>
„	<i>full</i>	„	<i>u.</i>
„	<i>rule</i>	„	<i>ú.</i>
„	<i>fume</i>	„	<i>ü.</i>
„	<i>ripe</i>	„	<i>ai.</i>
„	<i>foul</i>	„	<i>ou.</i>
The nasal sound of	<i>n</i>	„	<i>ñ.</i>

The letter *c* will always be used to indicate its soft sound as in *centre*; and *g* will be employed for the hard sound of that letter as in *gale*.